UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1998-0025

November 23, 1998

Cary Osterhaus
District Manager
Roseburg BLM District
777 NW Garden Valley Blvd.
Roseburg, Oregon 97470

Re: Section 7 consultation on actions affecting Umpqua River cutthroat trout and Oregon Coast coho salmon

Dear Mr. Osterhaus:

This responds to your Biological Assessment (BA) requesting consultation on actions that you feel are "likely to adversely affect" (LAA) Umpqua River cutthroat trout (UR cutthroat). You also noted that your effects determinations for the actions on Oregon Coast (OC) coho salmon and OC steelhead trout are the same as for UR cutthroat; this is because the habitat used by these species overlaps that of UR cutthroat and the BA assesses the effects of the proposed actions on this habitat. The BA describes the environmental baseline and effects of eight proposed timber sales: the Final Curtin, Dream Weaver, Buck Fever, and Sweet Pea timber sales are proposed for the Myrtle Creek watershed, the Happy Summit Density Management and Johnson Creek Commercial Thin timber sales are proposed for the Upper Smith River watershed, the Bell Mountain Regeneration and Thinning Harvest timber sale is proposed for the Elk Creek watershed, and the Christopher Folley Regeneration Harvest timber sale is proposed for the Canton Creek watershed. The purpose of this letter is to document our biological opinion (BO) that the proposed timber sales are not likely to jeopardize the continued existence of the potentially affected anadromous salmonid species listed under the Endangered Species Act (ESA), as explained below.

The BA was submitted to the National Marine Fisheries Service (NMFS) with a letter on July 16, 1998. This consultation on Roseburg District, Bureau of Land Management (BLM) actions is conducted under section 7(a) (2) of the ESA, and its implementing regulations, 50 CFR 402.

The UR cutthroat (*Oncorhynchus clarki clarki*) was listed as endangered under the ESA by the NMFS on August 9, 1996 (61 FR 41514), and critical habitat for this species was designated on January 9, 1998 (63 FR 1388). The OC coho salmon (*O. kisutch*) and OC steelhead trout (*O. mykiss*) Evolutionarily Significant Units (ESUs) were proposed as threatened under the ESA by NMFS on July 25, 1995 (60 FR 38011) and August 9, 1996 (61 FR 41541) respectively.

The OC coho and OC steelhead ESUs were reclassified as candidates for listing under the ESA by NMFS on May 6, 1997 (62 FR 24588) and March 19, 1998 (63 FR 13347) respectively, but the OC coho was subsequently listed as threatened on August 10, 1998 (63 FR 42587). Because of the OC coho listing, we have considered your LAA determination for this species simultaneously along with UR cutthroat in this consultation. This is because the NMFS has adopted a habitat-based "jeopardy" analysis ("Biological requirements and status..."[NMFS 1997d], "Application of Endangered Species Act standards to..." [NMFS 1997a] and the NMFS Biological Opinion and Conference Opinion on continued implementation of Land and Resource Management Plans of several National Forests and the Resource Management Plans of several BLM Districts, hereafter referred to as the LRMP/RMP Opinion, dated March 18, 1997 [NMFS 1997b]), and OC coho habitat is completely overlapped by that of UR cutthroat in these proposed actions.

Roseburg BLM personnel made the effects determinations in the BA following procedures described in NMFS (1997a, 1997b, and 1997d). The effects of the individual actions proposed in the BA were evaluated by BLM biologists at the project scale using criteria based upon the biological requirements of UR cutthroat and other potentially affected anadromous salmonids and the Aquatic Conservation Strategy (ACS) objectives of the Northwest Forest Plan (NFP, USDA and USDI 1994). The BLM biologists also evaluated the likely effects of the proposed actions on the watershed scale and in the long-term in the context of watershed processes. The Level 1 streamlined consultation team for the Roseburg BLM District has defined "long-term" for ESA consultation purposes as about a decade, while short-term effects would occur for a lesser period, most typically a few months to a few years. The Level 1 team for the Roseburg BLM District met on July 9, 1998 to review the BLM's effects determinations and documentation of ACS consistency for the timber sales. The team concurred on the effects determinations and ACS consistency analyses.

Proposed Actions

The "proposed actions" are the sale and harvest of timber in the Myrtle Creek, Upper Smith River, Elk Creek, and Canton Creek fifth field hydrologic unit codes[1] (HUCs) of the Umpqua River basin, in Douglas County, Oregon. Specifically, in the Myrtle Creek fifth field HUC (a fifth field HUC will be considered a "watershed" for consultation purposes), the Final Curtin, Dream Weaver, Buck Fever, and Sweet Pea timber sales are proposed for the Upper South Myrtle Creek sixth field HUC; in the Upper Smith River watershed, the Happy Summit Density Management Timber Sale is proposed for the Upper Smith River sixth field HUC, and the Johnson Creek Commercial Thinning Timber Sale is

[1] Stream drainages can be arranged in nested heirarchies, in which a large drainage is composed of smaller drainages. The BLM uses a system in which these drainages are numbered in a computer data base for analytical purposes. The numerical identifier of a particular drainage in this data base (which is located in a specific column or "field" in the data base), is called its hydrologic unit code, or HUC. This HUC increases with decreasing drainage area, thus a fourth field HUC (such as the South Umpqua River) is composed of several fifth field HUCs (such as Myrtle Creek, etc.), and so on. The Northwest Forest Plan determined that the scale for Watershed Analyses should be 20 to 200 square miles, which often corresponds to a fifth field HUC.

proposed for the Middle Smith sixth field HUC; in the Elk Creek watershed, the Bell Mountain Regeneration and Thinning Harvest Timber Sale is proposed for the Elkton sixth field HUC; and in the Canton Creek watershed, the Christopher Folley Regeneration Harvest Timber Sale is proposed for the Lower Canton Creek sixth field HUC. The Environmental Assessments (EAs) for the timber sales, which were appended to the BLM's BA, have detailed information on each of the sales, but brief summaries are provided below.

Because all of the proposed timber sales in the Myrtle Creek watershed (Final Curtin, Dream Weaver, Buck Fever, and Sweet Pea) are within the Upper South Myrtle Creek sixth field HUC, and have similar characteristics (harvest and yarding type, etc.), they will be referred to henceforth as the Upper South Myrtle Timber Sale (USMTS). In the USMTS, the BLM proposes to regeneration harvest a total of 552 acres of timber in 18 units of the General Forest Management Area (GFMA) and Connectivity land designations (GFMA and Connectivity are BLM subdivisions of the NFP Matrix land designation). Yarding of harvested timber would be accomplished predominantly by partial (one-end) or full uphill suspension cable-yarding, but about ten percent of the acreage would be tractor-yarded. About 0.4 miles of semi-permanent road and 1.9 miles of temporary road would be constructed, about 1.0 miles of road would be water-barred and blocked, about 1.7 miles of road would be obliterated, and about 25 miles of existing roads would be renovated. About forty percent of the harvested acreage would be broadcast-burned to prepare the areas for seedling planting.

In the Happy Summit Density Management Timber Sale (Happy Summit), the BLM proposes to commercially thin 386 acres of Late Successional Reserve (LSR). "Density management" is a term the BLM uses to describe timber harvest in LSR and Riparian Reserves (RRs) that is designed to accelerate the achievement of late successional characteristics by enhancing the growth of the remaining trees. A small percentage of the harvest would consist of small patch openings. The primary objective of the sale is to accelerate the development of late-successional habitat. Happy Summit would occur in predominantly single-storied Douglas-fir dominated conifer stands 30 to 55 years of age and would enhance the desired stand characteristics including: maintenance of tree species diversity, larger diameter and fuller crowns on dominant trees, and large coarse woody debris. The BLM would thin "from below" below, retaining the largest and most vigorous trees at a rate of about 50 to 60% About 113 acres of the thinning would occur within the RRs of fish-bearing streams, but no-cut buffers of from 20 to 100 feet would be maintained along streams. Yarding and hauling of harvested timber would be accomplished by helicopter and partial (one-end) uphill suspension cable-yarding. No new roads would be constructed, 5.7 miles of existing roads would be renovated, and 0.6 miles of road would be obliterated.

In the Johnson Creek Commercial Thinning Timber Sale (Johnson Creek), about 303 acres of timber would be commercially thinned from below from 30 to 40 year-old stands in the GFMA and Connectivity land designations. About 55 acres of the thinning would occur within the RRs of fish-bearing streams, where 20 to 100-foot no-cut buffers would be maintained. About two-thirds of the harvest acreage in Johnson Creek would be cable-yarded (one-end suspension) and the remainder

would be tractor-yarded. About 10.1 miles of existing roads would be renovated and improved for the sale, about 1.1 miles of temporary road would be constructed, about 0.9 miles of road would be water-barred and blocked, and about 0.7 miles of road would be obliterated.
The Bell Mountain Regeneration and Thinning Harvest Timber Sale (Bell Mountain) would involve the harvest of timber in the GFMA and Connectivity land designations; 54 acres would be regeneration harvested, while 155 acres would be commercially thinned from below. About 20 acres of the thinning ("density management") would occur within the RRs of fish-bearing streams, although 20 to 100-foot no-cut buffers would be maintained along streams. Most yarding in Bell Mountain would be by partial suspension cable or tractor, with a small helicopter component. About 7.2 miles of existing roads would be renovated or improved for the sale, about 0.6 miles of temporary road would be constructed, and about 0.3 miles of road would be water-barred and blocked, and one culvert would be replaced (to facilitate fish passage).

A total of 215 acres of timber would be harvested in the GFMA and Connectivity land designations for the Christopher Folley Regeneration Harvest Timber Sale (Christopher Folley). Yarding in Christopher Folley would be by helicopter, partial suspension cable or tractor. About 16.9 miles of existing roads would be renovated or improved for the sale, and about 500 feet of temporary road would be constructed.

Biological Information and Critical Habitat

The biological requirements (including the elements of critical habitat) of each of the ESUs are discussed in the LRMP/RMP Opinion, NMFS (1997b) and in NMFS (1997d). Environmental baseline conditions in the Umpqua Basin are discussed in Johnson et al. (1994), pages 2-7 of NMFS (1997d) and pages 13-14 of the LRMP/RMP Opinion. Cumulative effects as defined under 50 CFR 402.02 are discussed for the Umpqua Basin on pages 40-43 of the NMFS LRMP/RMP Opinion. These respective analyses are incorporated herein by this reference. NMFS is not aware of any newly available information that would materially change these previous analyses of biological requirements, environmental baseline or cumulative effects for the purpose of this Opinion. Some general biological information is provided below.

UR cutthroat inhabit the Umpqua River Basin of southwest Oregon, and the ESU consists of resident, potamodromous, and anadromous life histories. Individuals of all three forms have the potential to inhabit the Myrtle Creek, Upper Smith River, Elk Creek, and Canton Creek watersheds. UR cutthroat are known to be year-around inhabitants (using rearing, feeding, spawning, and incubation habitat) of all of the subject watersheds, and the watersheds are likely used as migration corridors by both adults and juveniles of the ESU. Historically, adult anadromous cutthroat trout passed Winchester Dam (on the North Umpqua River) predominantly from late June through November, with peaks in mid-July and mid-October, while juvenile outmigration is thought to occur chiefly from March through October (Johnson et al. 1994).

OC coho are an anadromous species which typically have a three-year life-cycle and occur in all four subject watersheds. Adults spawn in the late fall and winter, with fry emergence occurring the following spring. Juvenile coho salmon rear for about a year in natal streams and then outmigrate to the ocean as smolts in the spring. Some male coho return to freshwater to spawn the fall and winter of the same year as their smolt migration, but the majority of adult OC coho do not return to spawn until having spent about 18 months in the ocean. Thus, an active OC coho stream would be used for some life-stage as rearing, feeding, spawning, and incubation habitat year-round.

The BLM's Myrtle Creek Watershed Analysis (WA) lists approximately 93 miles of stream in that watershed inhabited by anadromous fish (including OC coho and UR cutthroat), and at least 78 miles used by resident fish (mostly UR cutthroat). The equivalent stream mileage documented in the Canton Creek WA for these species/migratory forms is 35 and 4. Similar estimates were not available for the Upper Smith River and Elk Creek watersheds, but each provide scores of miles of habitat for anadromous and resident salmonids.

Although general information about the populations of UR cutthroat and OC coho within the Myrtle Creek, Upper Smith River, Elk Creek, and Canton Creek watersheds is available (e.g., those streams likely inhabited), specific information on the size and health of anadromous fish populations in the Umpqua Basin is often lacking or incomplete. Because of the general paucity of the type of knowledge which would allow the BLM and NMFS to assess the relative health of anadromous salmonid populations on a stream or watershed scale and the fact that all fish species, populations, and individuals depend on adequate habitat, the NMFS uses a habitat-based system in ESA consultation on land-management activities (NMFS 1997d). The NMFS has applied the concept of Properly Functioning Condition (PFC) to assess the quality of the habitat that fish need to survive and recover. This concept is discussed in the next section.

Site-specific environmental baseline descriptions and effects determinations were made by BLM personnel for each of the proposed timber sales. This information is found in the EAs, watershed analyses (WAs), and the project-level (sixth field HUC) Matrices of Pathways and Indicators (MPIs) which were included in the BA. In addition, watershed-level information on UR cutthroat and OC coho habitat is provided in the EAs, WAs, and fifth-field MPIs also included in the BA. NMFS concurred with these site-specific and watershed environmental baseline descriptions and effects determinations in the streamlined consultation process, and NMFS considered them in addition to the broad scale analysis done for the LRMP/RMP Opinion described above.

Evaluation of Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by the consultation regulations (50 C.F.R. 402). NMFS (1997a) describes how NMFS applies the ESA jeopardy and destruction/adverse modification of critical habitat standards to consultations for Federal land management actions in the Umpqua River basin.

As described in NMFS (1997a), the first steps in applying the ESA jeopardy standards are to define the biological requirements of UR cutthroat and OC coho and to describe the species' current status as reflected by the environmental baseline. In the next steps, NMFS' jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (defined in NMFS 1997d). The analysis takes into consideration an overall picture of the beneficial and detrimental activities taking place within the action area, which is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). If the net effect of the activities is found to jeopardize the listed species, then NMFS must identify any reasonable and prudent alternatives to the proposed action.

Biological Requirements. For this consultation, NMFS finds that the biological requirements of UR cutthroat and OC coho are best expressed in terms of current population status and environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the species. The NMFS defines this "properly functioning condition" (PFC) as the state in which all of the individual habitat factors operate together to provide a healthy aquatic ecosystem that meets the biological requirements of the fish species of interest. Individual measurable habitat factors (or indicators) have been identified (e.g., water temperature, substrate, etc.), and the "properly functioning" values for these indicators have been determined, using the best information available. These indicators, when considered together, provide a summary of the conditions necessary to ensure the long-term survival of aquatic species.

The NMFS has assembled a set of these indicators in a form called the Matrix of Pathways and Indicators (MPI, NMFS 1996). The MPI is a table that lists several categories or "pathways" of essential salmonid habitat, such as water quality, instream habitat elements, and flow/hydrology. Under these pathways are quantitative habitat indicators for which ranges of values are identified that correspond to a "properly functioning" condition, an "at risk" condition, and a "not properly functioning" condition. Because these habitat measurements are more readily available than quantitative measurements of biological variables (such as incubation success, standing crop, and growth rate), the NMFS and BLM are able to assess the health of stream reaches or watersheds based on the condition of their component indicators. Such an assessment provides a baseline description of the health of the stream/ watershed, and also allows the effects of an action (e.g., timber harvest) to be evaluated.

Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are necessary for the survival and recovery of the listed species. It follows, then, that the NMFS has determined that an action which would cause the habitat indicators of a watershed to move to a degraded condition or one which further degrades a "not properly functioning" watershed is also likely to jeopardize the continued existence of the listed species.

In addition to the use of the MPI at the watershed level to assist in making "jeopardy" determinations in Section 7 consultations (especially for land management agencies), the NMFS also uses the MPI at the site or project scale. Assuming that a Federal agency determines that an action is a "may affect," either informal or formal consultation is required. To assist in this determination, the action agency prepares a project-level MPI. If no "degrades" occur at this scale, then the action is probably not likely to adversely affect individuals of a listed species, and an informal Section 7 consultation is appropriate. If the proposed action degrades any of the indicators at this smaller scale (often the sixth or seventh field HUC), then the action is generally considered to be a "likely to adversely affect," and formal consultation must occur.

Current range-wide status of listed species under environmental baseline. NMFS described the current population status of the UR cutthroat in its status review (Johnson et al. 1994) and in the final rule (August 9, 1996, 61 FR 41514). Critical habitat for UR cutthroat was designated by the NMFS on January 9, 1998 (63 FR 1338). NMFS also described the current population status of OC coho in a status review (Weitkamp et al. 1995) and in the final rule (August 10, 1998, 63 FR 42587). The recent range-wide status of both these species is summarized in NMFS (1997d).

Current status of listed species under environmental baseline within the action areas. As noted above, the "action area" includes all areas directly or indirectly affected by the proposed action. The general action areas for this BO can be defined as the Myrtle Creek, Upper Smith River, Elk Creek, and Canton Creek watersheds.

As noted above, UR cutthroat and OC coho use the action areas as rearing, feeding, spawning, and incubation habitat, as well as a migration corridor. The environmental baseline of the action areas are dominated by conditions rated largely as "not properly functioning" or "at risk" (see watershed MPIs in BA). These conditions are likely primarily the result of past forest management and agricultural practices, in particular, timber harvest/clearing within riparian zones, large-scale clear-cut timber harvest, road construction (especially within riparian zones), and timber yarding in riparian zones and streams.

Indicators particularly at issue in this consultation are those which would likely be degraded by the proposed actions at the project scale, although the NMFS has also reviewed the BLM's "maintain" and "restore" effect determinations. In this case "peak/base flows," "disturbance history," and "RRs" were determined to be degraded at the project scale by at least one of the timber sales, and were listed as "not properly functioning" for all four of the subject watersheds; "sediment" was determined to be degraded by all but one of the actions, and was also listed as "not properly functioning" in three of four watersheds; and "substrate" would likely be degraded by all but one of the actions, but was "not properly functioning" in only one of the watersheds.

Based on the best information available on the current status of UR cutthroat and OC coho (NMFS 1997d), NMFS assumptions given the information available regarding population status, population

trends, and genetics (NMFS 1997a), and the relatively poor environmental baseline conditions within the action areas (see MPIs in BA and UR cutthroat and OC coho final listing rules), NMFS finds that the environmental baseline does not currently meet all of the biological requirements for the survival and recovery of the listed species within the action area. Actions that do not retard attainment of properly functioning aquatic conditions, when added to the environmental baseline, are necessary to meet the needs of the species for survival and recovery.

Analysis of Effects

The effects determinations in this opinion were made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting effects of actions on them. This process is described in the document "Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996). This assessment method (in which MPIs are assembled by action agency biologists) was designed for the purpose of providing adequate information in a tabular form for NMFS to determine the effects of actions subject to consultation. Additionally, a detailed discussion of the potential effects of timber harvest and associated activities on salmonid habitat is presented in the NMFS document entitled "Potential Effects of Timber Harvest and Associated Activities on Salmonid Habitat and Measures to Minimize Those Effects" (NMFS 1997c), and is incorporated herein by this reference. Similarly, a general discussion of the potential effects of associated road construction on salmonids and their habitat is provided in LRMP/RMP Opinion, NMFS (1997b).

The BLM uses the MPI to make project-level effects determinations: whether an action is "not likely to adversely affect" or "likely to adversely affect" (LAA) the ESA-listed species (in this case, UR cutthroat and OC coho). If any of the indicators is thought to be degraded at the project level by the action, the action is determined to LAA. In turn, if a project was determined to LAA a listed species, then, based on the "jeopardy" standard delineated in the LRMP/RMP Opinion, the BLM needs to determine whether the project, when combined with the environmental baseline for the watershed over the long-term, was consistent with the ACS of the NFP. This "consistency" is condensed to a two-part test in the LRMP/RMP Opinion (NMFS 1997a, pg. 14): Is the proposed action in compliance with the standards and guidelines for the relevant land allocation, and does the proposed action meet all pertinent ACS objectives? This determination is made with the assistance of the MPI at the watershed scale.

Project-Level Effects. The BLM-provided MPIs for the effects of actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the project area for each sixth field HUC affected by the proposed timber sales. The results of the completed checklist for the proposed action provide a basis for determining the effects of the action on the environmental baseline in the project area.

In this consultation, the BLM provided an MPI for one sixth field HUC for each of the five timber sales. In general, the BLM determined the actions would not degrade indicators at the project level, chiefly because of the maintenance (through the use of full-width RR buffers) and/or enhancement (through thinning from below in young RR stands to enhance growth of remaining trees) of the riparian zones. Also, the BLM believes that timber harvest would be performed in ways which would have little or no effect on the hydrologic characteristics of the sites, because of relatively small effects on canopy closure.

USMTS. For the USMTS, the BLM found that on the project level, the "sediment," "substrate," and "disturbance history" indicators would be degraded due to the action, and all other indicators would be maintained. The BLM attributes the "degrade" checkmark for "sediment" and "substrate" to a transitory increase in stream sedimentation, due to road renovation/maintenance, culvert replacement, and ground-based timber yarding. The NMFS notes that the proposed road and skid trail obliteration/decommissioning could also cause short-term, localized sedimentation. In USMTS, as well as the other timber sales in this Biological Opinion (BO), RR buffers and/or road construction/maintenance techniques should prevent most (or all) of the ground-disturbing activities from transmitting substantial amounts of sediment into stream channels. The BLM also attributed a "degrade" to the "disturbance history" indicator because the action would result in lessened canopy cover, which, depending on the local conditions, has the potential to affect hydrologic functions such as peak and base flows, and channel conditions. In this case, however, because hydrologic recovery will remain above the 75% level in all four of the seventh field HUCs that would be affected by the USMTS, and because of the currently stable streambanks and channel within these seventh field HUCs, the BLM believes that degradation of the indicator would not cause any adverse effects on UR cutthroat habitat, as changes in the indicator would likely not directly affect riparian or aquatic habitat. Because of the presence of the "degrade" checkmarks on the project scale, the BLM determined that the USMTS is likely to adversely affect UR cutthroat. The NMFS concurs with the BLM on this project-level effects determination.

Happy Summit. For Happy Summit, the BLM found, as shown in the sixth field MPI, that the "sediment," "substrate," "disturbance history," and "RRs" indicators would be degraded due to the action, and all other indicators would be maintained. The BLM attributes the "degrade" checkmarks for "sediment" and "substrate" to a transitory increase in stream sedimentation, due to culvert replacement. The NMFS notes that the road renovation/maintenance and the small amount of road obliteration might also cause short-term, localized sedimentation. The "degrade" determination for the "disturbance history" indicator is because the action would result in lessened canopy cover, but the BLM points out that that would not necessarily cause any adverse effect on UR cutthroat habitat. "Disturbance history" cannot directly affect anadromous fish or other aquatic biota, but may affect other mechanisms, such as peak/base flows or streambank condition, which are also included among the indicators. Thus, the BLM believes that while the "disturbance history" indicator would be degraded due to a temporary decrease in canopy cover, the change in canopy cover would not, for example, affect peak flows during rain on snow events enough to widen stream channels enough to affect the

amount of pool habitat for listed fish. The BLM also attributes a "degrade" to "RRs," because thinning will occur in that this land designation, and some potentially adverse effects, such as soil disturbance and short-term loss of future woody debris (thinned trees) may occur. Tree thinning should not have any direct effects on streams, because the no-cut buffer should be able to filter sediment, as well as maintain shade and bank stability. The long-term effect of woody debris should be positive, because the thinning would leave the largest trees and allow these trees to grow more quickly to eventually produce longer and more massive pieces large woody debris. Because of the presence of the "degrade" checkmarks on the project scale, the BLM determined that Happy Summit is likely to adversely affect UR cutthroat. The NMFS concurs with the BLM on the project-level effects determinations for Happy Summit.

Johnson Creek. For Johnson Creek, the BLM found that the same four indicators would be degraded due to the action as for Happy Summit (all other indicators would be maintained). The attribution of the "degrade" checkmarks is also essentially the same as for Happy Summit. Because of the presence of the "degrade" checkmarks on the project scale, the BLM determined that Johnson Creek is likely to adversely affect UR cutthroat. The NMFS concurs with the BLM on the project-level effects determinations for Johnson Creek.

Bell Mountain. For Bell Mountain, the BLM found that the same four indicators would be degraded due to the action as for Happy Summit and Johnson Creek (and all other indicators would be maintained), although Bell Mountain would occur in a different watershed. The attribution of the "degrade" checkmarks is also essentially the same as for Happy Summit and Johnson Creek. Because of the presence of the "degrade" checkmarks on the project scale, the BLM determined that Bell Mountain is likely to adversely affect UR cutthroat. The NMFS concurs with the BLM on the project-level effects determinations for Bell Mountain.

Christopher Folley. For Christopher Folley, the BLM found, as shown in the sixth field MPI, that the "peak/base flows" and "disturbance history" indicators would be degraded due to the action, and all other indicators would be maintained. The BLM attributes the "degrade" checkmark for "peak/base flows" to a small decrease in the proportion of the sixth field that would be hydrologically recovered (because of the decrease in canopy closure), which has the potential to cause a slight increase in peak flows. The "degrade" determination for the "disturbance history" indicator is because the action would result in lessened canopy cover. However, as noted above, degradation of this indicator would not necessarily cause any adverse effect on UR cutthroat habitat. Because of the presence of the "degrade" checkmarks on the project scale, the BLM determined that Christopher Folley is likely to adversely affect UR cutthroat. The NMFS concurs with the BLM on the project-level effects determinations for Christopher Folley.

Watershed-Level Effects. In the BA, the BLM provided watershed-scale MPIs for each of the five timber sales, along with ACS Consistency reviews for each sale. The watershed-scale MPIs evaluate the effects of the proposed action on habitat indicators in the fifth-field HUC relative to the long-term

environmental baseline. That is, while many actions, including those that may be beneficial in the long-term, have short-term, small scale adverse effects, only those actions which would adversely affect the environmental baseline over an entire watershed over a long period would receive a "degrade" checkmark. It is important to realize that both active and passive restoration activities contribute to the environmental baseline. In particular, the passive restoration that will occur over the long-term (at least a decade, see above), especially in RRs, is a principal component of the watershed recovery aspect of the NFP. The role of RRs, LSRs, etc., in restoration of watersheds is described in the NFP ROD (USDA and USDI 1994) and in the LRMP/RMP Opinion (NMFS 1997b).

The ACS consistency reviews included a description of how the proposed projects compare to the applicable NFP standards and guidelines (S&Gs), and how the proposed projects comply with the nine ACS objectives. Because there is strong correspondence between the habitat indicators of the MPI and the ACS objectives, it is likely that if none of the habitat indicators in the watershed level MPI is degraded by an action, then compliance with ACS objectives is also achieved. In the descriptions below, typically only those MPI habitat indicators which were determined to "degrade" or "restore" at the sixth field HUC are discussed; similarly, the S&Gs and ACS objectives which may be of issue are noted. Whether discussed below or not, information on all of the habitat indicators, relevant S&Gs, and ACS objectives was provided in the BLM's BA, and was considered in our analysis.

Myrtle Creek watershed. The USMTS is proposed for the Myrtle Creek watershed, which is a non-Key Watershed under the NFP. For this action, the BLM determined that all of the habitat indicators would be maintained at the Myrtle Creek watershed scale, despite the project-level "degrades" which were recorded in the Upper South Myrtle Creek sixth field HUC. As noted under "Project-level effects," above, the "sediment" and "substrate" indicators were thought to be degraded due to road and skid trail-related actions such as maintenance, renovation, and decommissioning. In the long-term and on the watershed scale, however, these "degrades" were not thought to be consequential, because of their short-term and highly localized nature. Proper road maintenance and renovation, in fact, is likely to diminish the adverse effects of roads by allowing the drainage design features to work properly. Road decommissioning should be an even more beneficial action.

Also for the Upper South Myrtle Creek sixth field HUC, the "disturbance history" indicator was determined to be degraded, but on the watershed scale, a "maintain" was checked. This is because the amount of roads and skid trails in the watershed would be slightly reduced, and because the amount of canopy cover removed during the sale (552 acres) is small when compared to the long-term baseline in the watershed. Thus, the adverse effects of the sixth field "disturbance history" degrade should not impair recovery of the watershed. Regarding the "disturbance history" effects on peak flows, for example, according to the Myrtle Creek WA, about 1,012 acres of Federal ownership in the watershed has vegetation in the 0-10 year age class, about 890 acres of Federal ownership is in the 11-20 year age class, and about 1,292 acres is in the 21-30 age class. In this watershed, land is considered to be hydrologically recovered when vegetation reaches 30 years of age, so within the next 10 years (the long-term), nearly 1,300 acres in the watershed will achieve full hydrologic recovery.

During the same period, growth in another 1,900 acres will achieve partial recovery. Therefore, even with canopy cover temporarily reduced to zero on 552 acres, the watershed as a whole would move closer to hydrologic recovery, due to passive restoration of canopy cover.

During the same ten year period, other timber sales on Federal land will be proposed, but (according to the WA) approximately 42% of the Federal forest land in the Myrtle Creek watershed will be protected as RR. Therefore, approximately two-fifths of the Federal forest land in the watershed (the most important portion, from an anadromous fish viewpoint) will be protected from non-restorative activities, so that the relatively small amounts of regeneration harvest, etc. proposed for GFMA and Connectivity lands should not retard the recovery of the watershed as a whole. The slight increases in factors which may affect peak flows is also discussed in the EA for the sale.

Based on the EA and ACS Consistency Review for USMTS, it appears that all of the relevant S&Gs would be observed. Compliance with the nine ACS objectives is also adequately described by the BLM; compliance with the sixth objective, "maintain and restore instream flows..." is discussed in the previous paragraphs.

Upper Smith River watershed. The BLM has proposed Happy Summit and Johnson Creek for the Upper Smith River watershed, a Tier 1 Key Watershed, and determined that all of the habitat indicators would be maintained at the watershed scale, despite the project-level "degrades" which were recorded in the project-level MPI. As noted under "Project-level effects," above, the "sediment" and "substrate" indicators were thought to be degraded in both sixth field HUCs due to culvert replacement, road maintenance and renovation, and road decommissioning. As discussed under the USMTS, however, however, these "degrades" were not thought to be consequential in the long-term and on the watershed scale.

The BLM also determined that "disturbance history" and "RRs" would be degraded in both sixth field HUCs, but these indicators would be maintained at the watershed scale. Regarding "disturbance history," the timber sales in question would involve thinning, rather than regeneration harvest, so while trees would be harvested, effect on hydrologic processes, for example, would be less. On the whole, the BLM estimates that the proportion of Federal land in the Upper Smith River watershed that is hydrologically recovered will increase from 90% to 96% in the next ten years. In addition, as noted in the BLM's ACS objective reviews, 98% of Federal land in the watershed is either in LSR or RR. Thus, only actions which contribute to recovery are to occur. A small amount of road decommissioning/obliteration will also occur with the timber sales, which contributes to the "maintain" rating for the "disturbance history" indicator at the watershed scale.

In its ACS Consistency Review for both Upper Smith timber sales, the BLM noted that RRs were designated as two-site potential tree heights (400 feet) for fish-bearing streams. Although S&G TM-1 normally prohibits tree harvest within RRs, in these sales the development of late-successional habitat should be accelerated (see Middle and Upper Smith River WA), a restorative action, so thinning in the

RRs was considered to be consistent with the ACS. A 20 to 100-foot no-cut buffer along streams would be maintained within RRs to be thinned to prevent adverse temperature, bank stability, etc. effects. From the BLM's review, it appears that TM-1 and all of the other relevant S&Gs would be observed. Compliance with the nine ACS objectives is also adequately described.

Elk Creek watershed. The BLM has proposed Bell Mountain for the Elk Creek watershed, which is a non-Key Watershed under the NFP. The BLM determined that all of the habitat indicators would be maintained at the watershed scale, despite the four project-level "degrades" which were recorded in the Elkton sixth field HUC. As noted under "Project-level effects," above, the "sediment" and "substrate" indicators were thought to be degraded due to culvert replacement, road maintenance and renovation, and road decommissioning. As discussed under the USMTS, however, however, these "degrades" were not thought to be consequential in the long-term and on the watershed scale.

Regarding "disturbance history," the regeneration harvest proposed for Bell Mountain would increase the Equivalent Clearcut Area by a small amount on the watershed scale. Based on information in the WA, the 54 acres of this type of harvest proposed for Bell Mountain would be a small part of the 1,000 acres of Federal land which would be regeneration harvested in the next ten years. However, during the same ten year period, more than 3,400 acres in the watershed would achieve hydrologic recovery, and so recovery should not be impaired. Moreover, passive restoration would proceed in all of the 70% of the Federal watershed that is in the LSR or RR designations. Even if no active restoration in the watershed occurs, in the long-term, the watershed will continue to recover, due to passive restoration in RRs and LSRs.

Similar to the proposed timber sales in the Upper Smith River watershed, riparian commercial thinning in Bell Mountain would accelerate the development of late successional vegetation. Although some site-specific short-term adverse effect may occur, the long-term effect would be restorative. On the watershed scale, however, the adverse and beneficial effects would be small (see discussion for Upper Smith River watershed). It appears that TM-1 and all of the other relevant S&Gs would be observed, while compliance with the nine ACS objectives is also adequately described.

Canton Creek watershed. Christopher Folley is proposed for the Lower Canton Creek sixth-field HUC of the Canton Creek watershed, a Tier 1 Key Watershed under the NFP. For this action, the BLM determined that all of the habitat indicators would be maintained at the watershed scale, despite the project-level "degrades" which were recorded at the project scale. As noted under "Project-level effects," the "peak/base flows" and "disturbance history" indicators were thought to be degraded due to the regeneration harvest. The BLM believes that the level and type of regeneration harvest proposed would not have a substantial effect on the two indicators, when viewed on the watershed scale for the long term, because of the relatively small impact of the project-level effects would be overwhelmed by (primarily passive) restoration efforts. This is because a small amount of road would be renovated/improved, and because the amount of canopy cover removed during the sale (215 acres) is small when compared to the long-term baseline in the watershed. In particular, the effect on peak flows

should be minor. The acreage proposed for harvest is about 0.5% of the Canton Creek watershed, and the BLM (in their "Geotechnical and Environmental Review...", a part of the BA) estimates that this action would increase peak flows in the sixth field HUC by 0.5% and in the watershed by 0.1%. The calculated increase in peak flow should primarily apply to events in the fall and spring, when peak flows are not normally as high as in the winter, and should not affect bedload transport. Additionally, as discussed below, the relatively small amount of canopy cover reduction caused by the action would not impede recovery of the watershed as a whole, because of the large amount of passive restoration in other portions of the watershed.

The effects of the sixth field "disturbance history" degrade should not impair recovery of the watershed, because of growth of early seral vegetation. For example, according to information in the Canton Creek WA, in 1995, about 9% of the Federal ownership in the watershed had vegetation in the 0-15 year age class, with an additional 7% in the 15 to 25 year age class. In this watershed, land is considered to be substantially hydrologically recovered when vegetation 25 to 30 years of age and fully recovered at 40 years of age, so within the next 10 years (the long-term), nearly 2,800 acres in the watershed will achieve substantial or full hydrologic recovery. During the same period, growth in another 3,700 acres will achieve partial recovery. Therefore, even with canopy cover temporarily reduced to zero on 215 acres, the watershed as a whole would move closer to hydrologic recovery and away from its disturbance history, due to passive restoration of canopy cover.

During the same ten year period, other timber sales on Federal land may be proposed, but (according to the WA) approximately 97% of the Federal forest land in the Canton Creek watershed will be protected as LSR or RR. Therefore, nearly all of the Federal forest land in the watershed (and all of the RR, the most important portion from an anadromous fish viewpoint) will be protected from non-restorative activities, so that the relatively small amounts of regeneration harvest, etc. proposed for GFMA and Connectivity lands should not retard the recovery of the watershed as a whole.

Based on the EA and ACS Consistency Review for Christopher Folley, it appears that all of the relevant S&Gs would be observed. Compliance with the nine ACS objectives is also adequately described by the BLM; compliance with the sixth objective, "maintain and restore instream flows..." is partially discussed in the previous paragraphs.

Effects Summary. NMFS has considered the applicability of these analyses to each of the timber sales identified in the BA and in this letter. The NMFS is not aware of any other special characteristics of the particular sales that would cause greater or materially different effects on the subject salmonid species and their habitat than is discussed in these references. Similarly, NMFS is not aware of any newly available information that would materially change these previous effects analyses. In that substantial portions of all of the watersheds discussed in this Opinion are privately-owned, the NMFS assumes that the cumulative effects of non-Federal land management practices will continue at similar intensities as in recent years (LRMP/RMP Opinion, pg. 41-42, NMFS 1997b).

The effects of the timber sales (and associated road-related activities) on UR cutthroat, OC coho, and their habitat are presented in the BA prepared by the BLM (specifically in the project and watershed-level MPIs, ACS Consistency Reviews, WAs and the EAs). The NMFS finds those descriptions to be adequate for this analysis. Based on this information, the NMFS does not believe these actions will likely result in more effects than expected or considered in the LRMP/RMP Opinion (1997b). In particular, the BLM determined, and the NMFS concurred, that relevant NFP S&Gs would be followed, and that ACS objectives would be met at the watershed scale and in the long term when the effects of the proposed timber sales are combined with the environmental baseline. This ACS consistency determination was made because the BLM showed that, despite their proposed actions, watershed habitat indicators would be maintained over the long-term.

The NMFS expects that ACS objectives which may be affected by the subject actions will be met for the following reasons: 1) potential sediment input from the small amount of proposed temporary and semi-permanent road construction will be minimized by implementation of appropriate mitigation measures, the temporary and semi-permanent roads would not occur in riparian areas, and no new permanent roads will be constructed; 2) potential sediment input from proposed road maintenance, improvement, renovation, storm-proofing, decommissioning, and obliteration will also be minimized by implementation of appropriate Best Management Practices, and the long-term effects of these actions should be beneficial because of lessened sediment and hydrologic effects from existing roads; 3) thinning in RRs in Happy Summit, Johnson Creek, and Bell Mountain will allow the remaining trees to attain old-grow characteristics, including height and mass, more quickly than otherwise; in the long-term, this should facilitate the production of superior sources of large woody debris for streams in the sale area, otherwise, no timber harvest will occur in RRs; 4) the ground compacting activity (partial suspension and tractor yarding) will be mitigated through ripping and water-barring of skid trails, and none of the hauling and yarding activity (except for that associated with riparian thinning) will occur in RRs; and 5) the amount of canopy cover removed in the timber sales would be small compared to the passive restoration which will occur in the watersheds over the long-term, and should not impair recovery of the watersheds. Despite the minor, short-term adverse effects, these actions maintain or restore essential habitat functions, and will not impede recovery of salmonid habitat, a long-term goal of the Northwest Forest Plan.

Section 7(a)(2) Determinations

The NMFS concludes that, when the effects of these proposed site specific actions are added to the environmental baseline and cumulative effects occurring in the relevant action areas, they are not likely to jeopardize the continued existence of UR cutthroat trout, OC coho salmon, or OC steelhead trout.

Additionally, the NMFS concludes that the proposed actions would not cause adverse modification or destruction of UR cutthroat critical habitat. This is because our “no jeopardy” conclusion is based on

the effects of the actions on UR cutthroat habitat. Because we have determined that the actions would not jeopardize the continued existence of UR cutthroat, it follows that UR cutthroat would not be adversely modified or destroyed.

In reaching these conclusions, NMFS has utilized the best scientific and commercial data available as documented herein and by the BA and documents incorporated by reference.

Incidental Take Statement

Effects resulting from temporary road construction, road maintenance, road renovation and storm proofing, and road and skid trail decommissioning (e.g., sedimentation) are expected to be the primary source of incidental take associated with the proposed timber sales covered by this Opinion. Because of the limited amount of new road construction and location of the road, and the implementation of appropriate mitigation measures for the other road-related activities, sediment impacts are expected to be minimized. Effects of harvesting in RRs are also expected to be minimal because no-cut buffers (of varying width, based on site characteristics) should reduce or eliminate stream sedimentation, and would maintain shade and bank stability, and most trees (including the largest) would be retained, which would provide short-term woody debris, and accelerate development of superior large woody debris in the future. The NMFS expects that the incidental take associated with the other effects (discussed in NMFS 1997d) of the subject timber sales will also be minimal.

Adverse effects of management actions such as these are largely unquantifiable in the short-term, and may not be measurable as long-term effects on the species' habitat or population levels. Therefore, even though the NMFS expects some low level of incidental take to occur due to these actions, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species themselves.

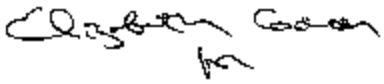
The incidental take statement in the LRMP/RMP Opinion (NMFS 1997b) provided reasonable and prudent measures and terms and conditions to avoid or minimize the take of listed salmonids from actions involving road construction (pages 65 and 70-72) that may be applied to site specific actions if appropriate. NMFS hereby applies the findings, reasonable and prudent measures, and terms and conditions set forth in the Incidental Take Statement of the programmatic LRMP/RMP Opinion (NMFS 1997b) to the site specific road construction action.

To the minimal extent that incidental take may result from the non-road construction aspects of the subject timber sales, NMFS finds that it is appropriate to prescribe reasonable and prudent measures, with terms and conditions, to further minimize or avoid such incidental take. Based on the effects analysis presented in NMFS (1997b), NMFS finds that the measures, terms, and conditions proposed in that document are appropriate for these actions. Therefore, NMFS further authorizes such minimal incidental take, provided the Roseburg BLM complies with those measures, terms, and conditions.

Conclusions

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). The Roseburg BLM must reinitiate this ESA consultation if: (1) the amount or extent of taking specified in the incidental take statement above, is exceeded; (2) new information reveals effects of the action that may affect listed species in a way not previously considered; (3) the action is modified in a manner that causes an effect to the listed species that was not previously considered; or (4) a new species is listed or critical habitat designated that may be affected by identified action. If you have any questions, please contact Dan Kenney of my staff at (541) 957-3385.

Sincerely,



William Stelle, Jr.
Regional Administrator

References

Johnson, O.W., R.S. Waples, T.C. Wainwright, K.G. Neely, F. W. Waknitz, and L. T. Parker. 1994. Status review of Oregon's Umpqua River sea-run cutthroat trout. National Marine Fisheries Service, Coastal Zone and Estuarine Studies Division, Seattle, Washington.

National Marine Fisheries Service (NMFS). 1996. Making Endangered Species Act determinations of effect for individual or grouped actions at the watershed scale. NMFS, Northwest Region, Seattle, Washington. August 1996.

National Marine Fisheries Service (NMFS). 1997a. Application of Endangered Species Act standards to: Umpqua River cutthroat trout, Oregon Coast coho salmon, Southern Oregon/Northern California coho salmon, Oregon Coast steelhead, Klamath Mountain Province steelhead, Lower Columbia steelhead, chum salmon, chinook salmon, and sea-run cutthroat trout. NMFS, Northwest Region, Seattle, Washington. February, 1997.

National Marine Fisheries Service (NMFS). 1997b. Biological Opinion and Conference Opinion on Implementation of Land and Resource Management Plans (USFS) and Resource Management Plans (BLM) on the Oregon Coast. NMFS, Northwest Region, Seattle, Washington. Biological Opinion and three attachments. March 18, 1997.

National Marine Fisheries Service (NMFS). 1997c. The potential effects of timber harvest and associated activities on salmonid habitat and measures to minimize those effects. NMFS, Northwest Region, Seattle, Washington. July, 1997.

National Marine Fisheries Service (NMFS). 1997d. Biological requirements and status under 1996 environmental baseline: Umpqua River cutthroat trout, Oregon Coast coho salmon, Oregon Coast steelhead, Southern Oregon/Northern California coho salmon, Klamath Mountain Province steelhead, Lower Columbia steelhead, and chum salmon. NMFS, Northwest Region, Seattle, Washington. September, 1997.

United States Department of Agriculture and United States Department of the Interior (USDA and USDI). 1994. Record of Decision for amendments to Forest Service and Bureau of Land Management planning documents within the range of the northern spotted owl. Washington, D.C. April 13, 1994.

Weitkamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon, and California. National Marine Fisheries Service, Northwest Fisheries Science Center, Seattle, Washington.